

## Allyson Park

Website: [allysonpark.github.io](http://allysonpark.github.io)

Contact form available on website

### EDUCATION

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University of California, Berkeley's College of Engineering	2018-present
<ul style="list-style-type: none"><li>- Majoring in Electrical Engineering and Computer Science</li><li>- Current GPA 3.912</li><li>- Expected graduation: Spring 2022</li></ul>	

### RESEARCH EXPERIENCE

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Summer Intern for IBM Research	May - August 2020
<ul style="list-style-type: none"><li>- Developing an autofocusing mechanism for digital reconstruction of holographic microscope images</li><li>- Researching and developing quantitative measures of focus for holographic images</li><li>- Utilizing supervised ML to track and classify plankton in videos collected from a digital holographic in-line microscope</li><li>- Full time researcher</li></ul>	
Undergraduate Researcher at UCSF Bondy-Denomy Lab (PI: Joseph Bondy-Denomy)	June 2019 - June 2020
<ul style="list-style-type: none"><li>- Full time researcher for Summer 2019; part time during the academic year.</li><li>- Conducting research regarding the structure, mechanisms, and evolution of anti-CRISPR proteins.</li><li>- Performing genomic analysis to predict immune/anti-immune activity, conduct de novo assembly of microbial genomes using Geneious, and draw evolutionary theories.</li><li>- Conducting genetic engineering and manipulation on bacteria and bacteriophages.</li><li>- Utilizing molecular biology techniques in informational assays.</li><li>- Engineering/manipulating proteins and microbial immune systems.</li><li>- Conducting bioinformatic analysis to predict protein function and find homologs for genes of known function.</li><li>- Using various analytic tools including NCBI Blast, NCBI Cobalt, Geneious Software, Phaster, CRISPR-Cas Finder, and more.</li></ul>	
Volunteer Laboratory Assistant at UCSF Bondy-Denomy Lab (PI: Joseph Bondy-Denomy)	February 2019 - June 2019
<ul style="list-style-type: none"><li>- Working under the supervision of graduate student Adair Borges.</li><li>- Studying CRISPR / Cas9 systems in tandem with anti-CRISPR systems.</li><li>- Testing various potential anti-CRISPR genes using molecular biology techniques including PCR, Gibson Assembly, transformation of chemically competent cells, transformation via electroporation, phage plaque assays and phage engineering.</li><li>- Learning/utilizing basic bioinformatics.</li></ul>	

### PRESENTATIONS AND PAPERS

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Gussow AB, **Park AE**, Borges AL, Shmakov SA, Makarova KS, Wolf YI, Bondy-Denomy J, Koonin EV. Novel anti-CRISPR protein families predicted with a machine-learning approach. Nat. Comms. In press (2020).

Leon LM, **Park AE**, Borges AL, Zhang JY, Bondy-Denomy J. Mobile Element warfare via CRISPR and anti-CRISPR in *Pseudomonas aeruginosa*. *bioRxiv*. (2020). doi: <https://doi.org/10.1101/2020.06.15.151498>

**Park AE**, Leon LM, Borges AL, Zhang JY, Bondy-Denomy J. Discovery and Characterization of Dual Function CRISPR-Cas Inhibitors. Poster presented at the Summer Research Training Program Student Research Symposium at the University of California, San Francisco. July 2019.

**Park AE**, Leon LM, Borges AL, Zhang JY, Bondy-Denomy J. Double Trouble: Discovery of Dual Function CRISPR-Cas Inhibitors. Poster presented at the 20th Annual Microbiology Student Symposium at the University of California, Berkeley. April 2019.

## WORK EXPERIENCE

(under)Graduate Student Instructor / Teachers Assistant	Fall 2020 Semester
<ul style="list-style-type: none"> <li>- Teaches discussion sections, lab sections, and holds office hours for the UC Berkeley class “CS61B: Data Structures”, taught by Josh Hug.</li> <li>- Develops lesson plans to teach undergraduates about data structures, sorting and search algorithms, version control with Git, and the Java language.</li> <li>- Helps manage logistical and administrative aspects of the course</li> </ul>	
Tutor	2014 - present
<ul style="list-style-type: none"> <li>- Tutors for various clients. Subjects taught include introductory computer science, data structures and algorithms, advanced placement chemistry, advanced placement biology, elementary math through multivariable calculus, reading comprehension, and writing for grades Pre-K through grade 12.</li> </ul>	
Freelance Copywriter	2014-2018
<ul style="list-style-type: none"> <li>- Has written text for various clients, including the websites for Butter Ventures, Easy Selling, Love Mexico, Moon &amp; Assoc., and United to Cure.</li> </ul>	

## EXTRACURRICULAR AND VOLUNTEER EXPERIENCE

<b>Academic Intern for UC Berkeley’s Department of Electrical Engineering and Computer Science.</b>	Spring 2020
<ul style="list-style-type: none"> <li>- Assists students taking UC Berkeley’s CS61B: Data Structures.</li> <li>- Facilitates labs and office hours by answering student questions about course content and general conceptual questions.</li> </ul>	
<b>Assistant producer, publicity team, media director</b> and performer for Jericho! Improv and Sketch Comedy team	2018-present
<ul style="list-style-type: none"> <li>- Assistant producer: reserves rooms for shows, is on the executive board that makes decisions the team’s future</li> <li>- Publicity team: Runs social media and creates graphics for print and web, primarily using Adobe Photoshop CS5.1 and Superimpose, a mobile app.</li> <li>- Media director: organizes the production of live and recorded sketches, oversees writing, direction and editing, and leads workshops on developing comedy sketches as well as video editing.</li> </ul>	
<b>Organizer, graphics director</b> , creator, and performer for <i>Avant Garde</i> , a local art show	2018-2019
<ul style="list-style-type: none"> <li>- Assists logistical planning of the event, creates graphics, and produces art.</li> </ul>	

## AWARDS AND HONORS

National Merit Scholar	2018
AP Scholar with Distinction	2018
Recipient of the Kyunggi Girls Merit Scholarship	2018

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## **PROFESSIONAL SKILLS/TOOLS**

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Proficiency with Python, C, Swift, Java and RISC-V. Introductory level experience with Scheme and SQLite.

iOS development using MVC paradigm and Storyboarding.

Object oriented design.

Test-driven development and thorough unit testing. Experienced with JUnit testing.

Efficient debugging and diagnosing issues in code.

Version control using Git.

Working with data structures and common algorithms, such as various search/sorting algorithms.

Application design and wireframing using Figma.

Proficiency with Microsoft Excel, Microsoft Word, Microsoft Powerpoint, ApE Plasmid Editor, Google Docs, Google Sheets, Adobe Photoshop and Adobe Premiere. Introductory level experience with Adobe InDesign and Adobe Illustrator.

Basic understanding of circuits and circuit design. Experience with simple bench top tools including oscilloscope, power supply units, function generator, multimeter, op-amps, and soldering iron.

Bioinformatics and genomic analysis/engineering. Deep understanding of microbiology, genetics, and evolution.

Graphic design for logos, social media, flyers, posters, and merchandise.

Strong understanding of calculus (single and multivariable), linear algebra, and differential equations.

Spanish Biliteracy for reading, speaking, and writing.

Ability to multitask and manage large independent projects.

Written and verbal communication.